UK Online Retail Project - Analytics Report

1. Project Objective

The goal of this project is to analyze the UK Online Retail dataset to uncover business insights on sales, customer behavior, and product performance. Using Power BI, we built an interactive dashboard to help stakeholders make data-driven decisions.

2. Dataset Information

The dataset contains transactional data from a UK-based online retailer. It includes:
- InvoiceNo: Unique identifier for each transaction
- StockCode: Product/item code
- Description: Product description
- Quantity: Number of items purchased
- InvoiceDate: Date and time of purchase
- UnitPrice: Price per item
- CustomerID: Unique customer identifier
- Country: Customer's location

3. Data Cleaning & Preparation

Key steps taken before analysis:
- Removed missing Customer IDs
- Converted InvoiceDate into Date & Time
- Removed negative quantities (returns/cancellations)
- Created calculated fields: Total Revenue = Quantity * UnitPrice
- Extracted Year, Month, Day for trend analysis

4. Dashboard Design

The Power BI dashboard was divided into two main sections:

a) Sales Overview:
- Total Revenue, Total Orders, Average Order Value, Total Customers
- Monthly Revenue Trend
- Top 5 Products by Revenue
- Revenue by Country (Map)
- Forecasted Revenue by Month

b) Customer Insights:
- New vs Repeat Customers
- Top 10 Customers by Revenue
- RFM Segmentation (Recency, Frequency, Monetary)
- Customer Segments: Loyal, VIP, Potential, Others

5. Key Insights

- Total Revenue: ~3.88M generated across ~7,961 orders
- Average Order Value: ~£487

- Majority of customers are repeat (99%), showing strong retention
- Revenue peaks in November, indicating holiday/seasonal demand
- Top product categories like Paper Crafts and Regency products are the biggest contributors
- UK dominates sales, but international buyers also contribute
- RFM Segmentation identifies VIP and Loyal customers crucial for business growth

6. Business Recommendations

- Focus on marketing during Q4 (holiday season) to maximize revenue
- Retain high-value customers with loyalty programs and exclusive offers
- Improve engagement with "Potential Loyalists" to convert them into VIPs
- Expand marketing efforts in top-performing international markets
- Address product return issues by analyzing negative quantities
- Bundle popular products to increase cross-selling opportunities

7. Conclusion

The UK Online Retail dashboard provides a holistic view of sales and customer behavior. It demonstrates key Power BI skills such as data cleaning, KPI building, advanced analytics (RFM, forecasting), and dashboard storytelling. This project is highly relevant for Data Analyst and BI roles, as it highlights both technical expertise and business acumen.